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Review of the Australian Ochteridae*

(Insecta, Heteroptera)

By M. Baehr

Abstract

The Australian Ochteridae are reviewed. All Australian species of *Ochterus* Latreille are keyed, the known species redescribed, and following taxa newly described: *Ochterus eurythorax*, spec. nov., *O. atridermis*, spec. nov., *O. pseudosecondus*, spec. nov., and *O. baehri riegeri*, subspec. nov. The distribution of Ochteridae in Australia is discussed. Eastern Queensland is the main centre of the Australian Ochteridae. Some species evidently spread to southern Australia, whereas the northern parts of the Northern Territory and northwestern Australia were colonized by own species or subspecies, respectively, each closely related to an Queensland taxon and perhaps rather recently isolated.

Introduction

Ochteridae are a small group of ripicolous bugs distributed throughout the tropical and warm-temperate regions of the world. In Australia two genera, *Ochterus* Latreille and *Megochterus* Jaczewski, occur. With exception of the remarkable giant *Megochterus nasutus* (Montandon) Ochteridae have been described but rather recently from Australia. The first species to be recorded was *Ochterus australicus* Jaczewski, described in 1934. It was not before the last 15 years that additional species were discovered, namely *Ochterus secundus* Kormilev, 1971 from southeastern Australia and *O. brachysoma* Rieger, 1977 and *O. baehri* Rieger, 1977, both from collections made by the author in the lower Cape York Peninsula in northern Queensland. No Ochterid, however, was ever recorded from the Northern Territory or northwestern Australia.

As several new taxa were discovered during collecting work in northern and northwestern Australia and during identification of museum material, and as all known species were described in scattered papers without thorough comparison of other species and without any key, a review of all Australian species was attempted. This review, however, is not a full revision, as descriptions of most species are rather satisfactory and these species do not need to be fully redescribed.

A thorough review is the more required, as Kormilev in his paper on the Australian and Oriental Ochteridae (KORMILEV 1971) not only merged several species together, but based his redescription of *O. australicus* Jaczewski on specimens belonging to another, new, species. Kormilev did not recognize the difference, because he failed to examine the male genitalia, especially the right parameres. In this new species the paramere is conspicuously different from that of *O. australicus*. For settling the characters of *O. australicus* and of the new species I eventually examined all specimens in the UQIC, identified by Kormilev as *O. australicus*, and I found as many as six different species within this

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sample, including specimens of *O. secundus*, a species described at the same time by Kormilev himself, from the type locality!

Evidently the examination of the male genitalia is indispensable for determination of Ochteridae. It is not after examination of male genitalia that species limits can be fixed, because colour and pattern vary to a considerable degree, and may be used for species definition but supplementary. Hence, male pygophores and right parameres of all Australian *Ochterus* species are described, including those of the known species.

With exception of *Megochterus nasutus* and *Ochterus australicus* which are both easily distinguished by size or male genitalia, respectively, typical material of all described species was considered. Altogether 255 specimens were examined.

Acknowledgements

For kind loan of types and specimens I am indebted to Miss M. A. Schneider (Brisbane), Dr. G. F. Gross (Adelaide), and Dr. C. Rieger (Nürtingen). Thanks are also due to the authorities of the Deutsche Forschungsgemeinschaft (DFG) for supporting of this study by a travel grant.

Abbreviations of collections mentioned in text

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| AMS | – Australian Museum, Sydney |
| CRN | – Coll. C. Rieger, Nürtingen |
| MNHN | – Muséum National d'Histoire Naturelle, Paris |
| NRS | – Naturhistoriska Riksmuseet, Stockholm |
| QM | – Queensland Museum, Brisbane |
| SAM | – South Australian Museum, Adelaide |
| UQIC | – University of Queensland Insect Collection, Brisbane |
| ZSM | – Zoologische Staatssammlung, München |

Measurements

Measurements were made under a stereo microscope using an ocular micrometer. Overall length of specimens was measured from anterior border of eye to apex of hemielytra, in shortwinged species to apex of abdomen. Length of pronotum (for width/length ratio) was measured from anterior border (medially) to most posteriorly produced part of base.

Characters

Best characters for species distinction is shape of ♂ pygophore and structure of right paramere, especially with respect to the form of its appendices. But colour and pattern of pronotum, hemielytra, and mouthparts are also fairly characteristic in most Australian species, as is shape of pronotum, in particular of the lateral borders. Size, however, varies to a considerable degree within species and is but of rather little value.

Key to the genera of Australian Ochteridae

1. Large species, 8.3–9.8 mm long. Frontal plate strongly produced above base of rostrum. Antennae very short. Membrane with ca 20 cells *Megochterus* Jaczewski
2. Smaller species, less than 6.5 mm long. Frontal plate at most slightly produced above base of rostrum. Antennae, especially 3rd and 4th segments, elongate. Membrane with only 7 cells *Ochterus* Latreille

Genus *Megochterus* Jaczewski

Jaczewski, 1934, p. 610
KORMILEV 1971, p. 443

For diagnosis see JACZEWSKI (1934). The genus is well defined and easily identified by the key. Only one species known.

Megochterus nasutus (Montandon)

Pelogonus nasutus Montandon, 1898, p. 72
JACZEWSKI 1934, p. 610 (*Megochterus*)
KORMILEV 1971, p. 443 (*Megochterus*)

Types. Presumably in MNHN (not seen).

The single species was well redescribed by both, JACZEWSKI (1934) and KORMILEV (1971). The latter examined numerous specimens and published a distribution map. According to KORMILEV (1971, map 2) *M. nasutus* occurs in southeastern Queensland and southwestern Australia.

Material examined (20 specimens). Queensland: 14 ♂♂, 6 ♀♀, Creek near Brown Lake, North Stradbroke Island, 22.IX.1984, D. K. Yeates (UQIC, CRN, ZSM).

Genus *Ochterus* Latreille

Latreille, 1807, p. 143
JACZEWSKI 1934, p. 601
KORMILEV 1971, p. 433

For additional records see JACZEWSKI (1934), who gave also a short diagnosis.

Key to the Australian species of the genus *Ochterus*

1. Frontal plate finely punctate and covered with very fine, short hairs. Large species, normally over 5 mm long. Hemelytra largely yellowish-brown with black spots. Appendices of ♂ right paramere falciform, conspicuously serrate on outer sides (Figs 27, 29) 2.
- Frontal plate not punctate nor covered with hairs, but with numerous transverse, slightly convergent ridges. Smaller species, normally less than 5 mm long. Hemelytra largely black with yellowish to brown spots, or clavus and most of corium uniformly rusty red. Appendices of ♂ right paramere not falciform nor conspicuously serrate on outer sides (Figs 16, 18, 20, 23, 25) 3.
2. ♂ pygophore deeply notched at apex (Fig. 28). Western Australia *pseudosecundus*, spec. nov.
- ♂ pygophore not notched at apex (Fig. 26). Eastern Australia, northwestern, perhaps also southwestern Australia *secundus* Kormilev
3. ♂ right paramere with elongate, pointed head. Appendices of paramere short and wide, apex not axe-shaped (Fig. 16). Eastern and southeastern Australia, perhaps southwestern Australia, New Caledonia, Solomon Islands, and New Hebrides *australicus* Jaczewski
- Head of right paramere not elongate nor pointed. Appendices of paramere either short and axe-shaped (Fig. 20), or elongate and apically gently excised (Figs 18, 23, 25) 4.
4. Posterior lobe of pronotum wholly yellow or medially yellow and laterally brown, lighter than anterior lobe (Figs 2, 3) 5.
- Posterior lobe of pronotum black, only medially with a small yellow border (Figs 4, 5) 7.

5. ♂ pygophore with lateral lobes far removed from apex (Fig. 17). Appendices of ♂ right paramere elongate, apically gently excised, not axe-shaped (Fig. 18). Corium with three light lateral spots (Fig. 8). Eastern Australia, Tasmania, New Guinea *eurythorax*, spec. nov.
 - ♂ pygophore with lateral lobes to apex (Fig. 19). Appendices of ♂ right paramere short, axe-shaped (Fig. 20). Corium with less than three light lateral spots (Figs 9, 10). *baehri* Rieger 6.
6. Apical border of ♂ pygophore slightly more convex. Appendices of ♂ right paramere less axe-shaped. Average slightly larger (3.65–4.25 mm). Lateral light spot on corium more circular (Fig. 9). Cape York Peninsula, northern Queensland. *baehri baehri* Rieger
 - Apical border of ♂ pygophore absolutely straight. Appendices of ♂ right paramere more axe-shaped (Fig. 20). Average slightly smaller (3.5–4 mm). Lateral light spot on corium small, transverse (Fig. 10). Northernmost part of Northern Territory *baehri riegeri*, subspec. nov.
7. Apical border line of abdomen at pygophore deeply notched (Fig. 21). Appendices of ♂ right paramere very elongate (Fig. 23). Pronotum relatively wide, ratio width/length c. 2.3 or more. Lateral border of corium with at least three light spots (Fig. 11). Cape York Peninsula, northern Queensland
 - *brachysoma* Rieger
 - Apical border line of abdomen at pygophore not notched. Appendices of ♂ right paramere short (Fig. 25). Pronotum narrow, ratio width/length c. 2.1. Lateral border of corium without distinct light spots (Fig. 12). Eastern Queensland, northernmost Northern Territory *atridermis*, spec. nov.

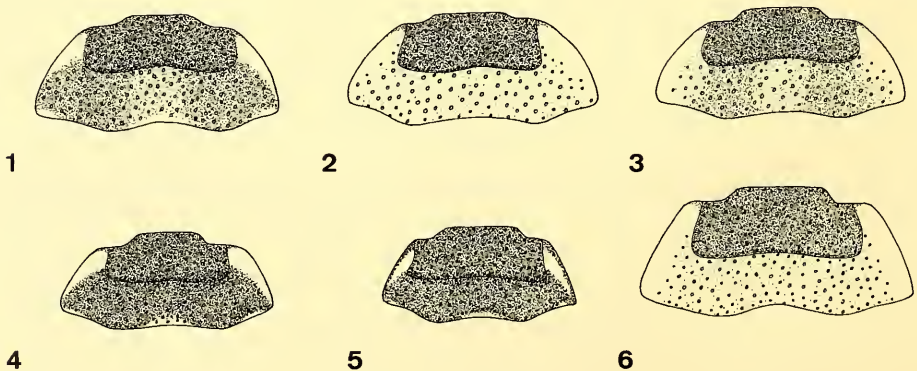
The species

Ochterus australicus Jaczewski (Figs 1, 7, 15, 16, 30)

Jaczewski, 1934, p. 607
KORMILEV 1971, p. 439

Types (not seen). Presumably in NRS.
Type locality. Not stated by author.

Diagnosis. A medium-sized species, best distinguished by ♂ genitalia, especially elongate, pointed head of right paramere and very short, wide appendices.



Figs 1–6. Pronota of Australian *Ochterus*. 1. *O. australicus* Jaczewski; 2. *O. eurythorax*, spec. nov.; 3. *O. baehri riegeri*, subspec. nov.; 4. *O. brachysoma* Rieger; 5. *O. atridermis*, spec. nov.; 6. *O. pseudosecondus*, spec. nov. Scale: 1 mm.

Description

A detailed description was given by JACZEWSKI (1934) and KORMILEV (1971). Kormilev, however, did not distinguish either *O. eurythorax*, spec. nov., nor *O. baehri* Rieger and *O. brachysoma* Rieger from *O. australicus*, because he did not dissect the ♂ genitalia of all specimens available. Moreover, Kormilev's redescription of *O. australicus* is actually based on specimens of *O. eurythorax*, spec. nov. For better distinction from related species some characters not mentioned by JACZEWSKI (1934) are added in the following redescription.

Length. ♂: 3.7–3.9 mm; ♀: 4–4.55 mm; width of pronotum: ♂: 1.9–2 mm; ♀: 2.05–2.3 mm; ratio width/length of pronotum: ♂: 2–2.1; ♀: 2–2.1; width of hemielytra: ♂: 2.15–2.25 mm; ♀: 2.25–2.55 mm.

Colour. Head, anterior lobe of pronotum, and scutellum black. Apical margin of clypeus yellow. Posterior lobe of pronotum brown, more or less widely yellow in middle. Dark punctures well visible in brown parts. Lateral borders anteriorly yellow. Hemielytra dark reddish to brown, sometimes with slight greenish tinge. Lateral border at base and three small, rather inconspicuous lateral spots yellow. Labium basally piceous, apically yellow. Legs yellow, tibiae and tarsi infuscate.

Head as in JACZEWSKI'S (1934) description.

Pronotum. Rather narrow (see measurements), sides not much convex, in some specimens even nearly straight. Punctures of posterior lobe dense and coarse.

Scutellum. Much wider at base than long. With rather scattered, fine punctures.

Hemielytra. Largely smooth. Clavus and corium with a row of punctures each along border. Membrane surpassing abdomen.

♂ genitalia. Pygophore apically strongly convex, frequently rather sinuate, lateral lobes far removed from apex. Right paramere with elongate, pointed, slightly keeled head, appendices very short, rather wide, apically slightly excised.

Variation. Judging from material at hand rather little variation noted.

Distribution (Fig. 30). According to KORMILEV (1971) who examined numerous specimens from most Australian museums, this species occurs in whole eastern Queensland, New South Wales, Victoria, eastern South Australia, southwestern Australia, Tasmania, and New Guinea. Several of his records from Victoria, southeastern Queensland, the Cape York Peninsula, New Guinea, and all records from Tasmania do actually not refer to this species. Hence, actually *O. australicus* does perhaps not occur in Tasmania, the Cape York Peninsula, northwestern Australia and most of the interior, and New Guinea.

Material examined (65 specimens):

Queensland: 1 ♂, Coen, Cape York Pen., 27. X. 1969, B. Cantrell (UQIC); 2 ♂♂, Cape York Penins., Mjöberg (SAM); 1 ♀, Stewart River, Cape York Pen., 6. IX. 1972, Baehr, Berg, Spieth (CRN); 1 ♂, 2 ♀, Tinaroo Creek, nr. Lake Tinaroo, 25. VIII. 1972, Baehr, Berg, Spieth (CRN); 1 ♀, 12 km NE. of Kairi, Lake Tinaroo, 29.–30. XII. 1981, M. Baehr (CRN); 1 ♀, Barron River, Walkamin, 4. XI. 1964, R. Elder (UQIC); 1 ♀, Malanda, Mjöberg (SAM); 1 ♂, Cairns Distr. A. M. Lea (SAM); 1 ♂, 1 ♀, Bellenden Ker, Mjöberg (SAM); 1 ♀, 2 ♀♀, Magnetic I., A. M. Lea (SAM); 1 ♂, Alice River, Mjöberg (SAM); 1 ♂, 1 ♀, Lotus Creek, 100 mi S. of Mackay, 11. VI. 1974, A. Portle (UQIC); 1 ♂, 1 ♀, Carnarvon Gorge, 30. I. 1962, E. Eyley (UQIC); 1 ♂, 1 ♀, Tewah Cr., via Tin Can Bay, 17.–18. X. 1970, B. K. Cantrell (UQIC); 2 ♂♂, 1 ♀, Freshwater Lake, Cooloolo, via Gympie, 17. X. 1970, T. Weir (UQIC); 1 ♀, Amberley, 20. II. 1962, B. Wilson (UQIC); 1 ♀, Sunnybank, 24. IX. 1937, P. W. Grogan (UQIC); 2 ♂♂, 3 ♀♀, Tibrogargan Cr., 20. VIII. 1957, T. E. Woodward (UQIC); 1 ♀, Nth Pine R., 4. XII. 1962, G. Monteith (UQIC); 5 ♂♂, 7 ♀♀, Beerwah, 22. IX. 1957, T. E. Woodward (UQIC); 1 ♀, Greenbank, 13. II. 1962, G. Monteith (UQIC); 1 ♀, Maclean, 28. II. 1965, T. Weir (UQIC); 1 ♀, Yarraman, 21. IV. 1957, E. N. March (UQIC); 1 ♀, Sandgate, 16. V. 1965, T. Weir (UQIC); 1 ♂, Somerset Dam, 4. II. 1957, T. E. Woodward (UQIC); 1 ♂, Upper Brookfield, 10. XII. 1962, G. Monteith (UQIC); 2 ♀♀, Caloundra, 17. VIII. 1934, F. A. Perkins (UQIC); 1 ♂, Brisbane, 14. II. 1965, B. Cantrell (UQIC); 1 ♀, 4 km S. of Tamborine, Dry Sand Creek, 10. XII. 1981, M. Baehr (CRN).

South Australia: 1 ♂, Mt. Gambier, 4.I. 1966, T. Weir (UQIC); 1 ♂, Adelaide, H. M. Hale (SAM); 1 ♂, Adelaide, A. M. Lea (SAM); 1 ♀, Belairs, 28. X. 1885, Tepper (SAM); 1 ♂, Northern Flinders Range, Moolooloo, H. M. Hale, 1921 (SAM).

Australia: 2 ♂♂, 1 ♀, Blackb's Coll. (SAM).

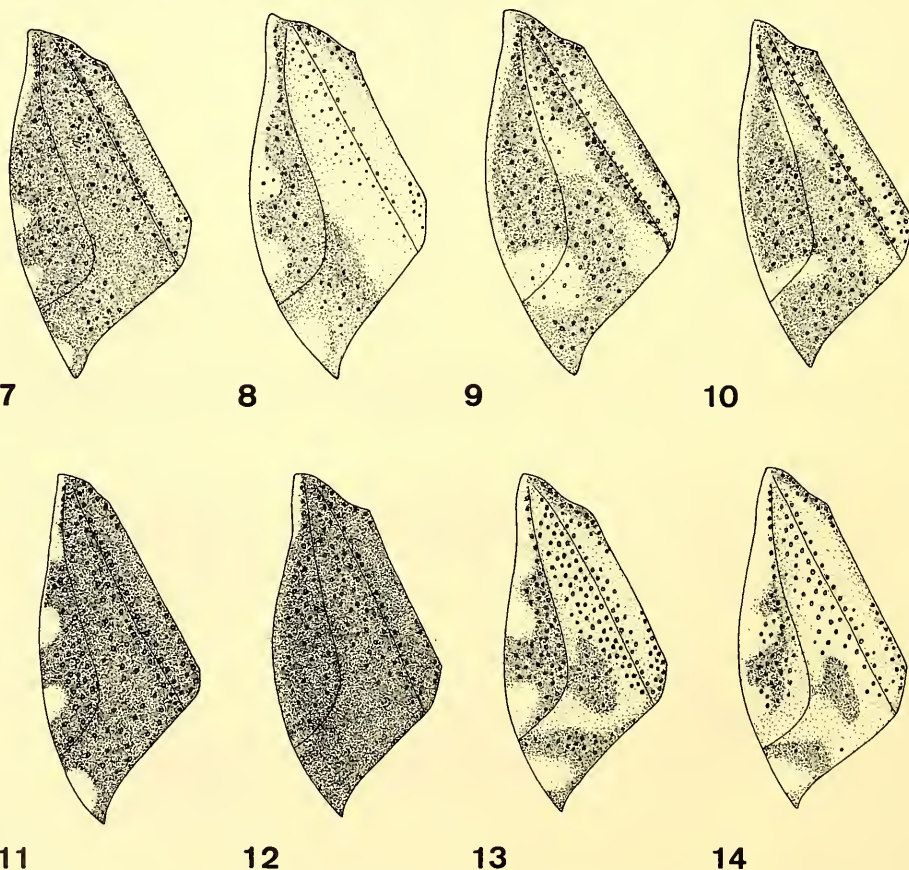
New Hebrides: 1 ♂, Camp 3, 290 m, Espiritu Santo, 13.IX. 1971, G. F. Gross, Roy. Soc. Percy Sladen Exp. (SAM).

Habits. So far known, this species lives near the borders of brooks, rivers, and lakes, Records are available from almost all months.

Ochterus eurythorax, spec. nov.

(Figs 2, 8, 17, 18, 31)

Types. Holotype. ♂, Dunwich, Stradbroke Isl., S. E. Qld., 15.-16.IV. 1967, B. Cantrell (QM). - Paratypes. 5 ♂♂, 2 ♀♀, same locality, same date (UQIC, ZSM); 1 ♀, same locality, 7.-8.V. 1966, B. Cantrell (UQIC); 3 ♂♂, 4 ♀♀, Brown Lake, North Stradbroke Isl., Qld., 21.-23.IX. 1984, R. de Keyzer (UQIC, ZSM); 3 ♂♂, 8 ♀♀, Creek nr. Brown Lake, N. Stradbroke Is., S. E. Q., 22.-24.IX. 1984, D. K. Yeates (UQIC, ZSM); 3 ♂♂,



Figs 7-14. Pattern of hemielytra of Australian *Ochterus*. 7. *O. australicus* Jaczewski; 8. *O. eurythorax*, spec. nov.; 9. *O. baebri baebri* Rieger; 10. *O. baebri riegeri*, subspec. nov.; 11. *O. brachysoma* Rieger; 12. *O. atridermis*, spec. nov.; 13. *O. secundus* Kormilev; 14. *O. pseudosecondus*, spec. nov.

3 ♀♀, Nth. Stradbroke Is., Qld., 20. IV. 1968, T. Weir (UQIC); 1 ♂, Freshwater Lake, Cooloola via Gympie, S. E. Q., 17. X. 1970, T. Weir (UQIC); 6 ♂♂, 7 ♀♀, Birraheen Lake, Fraser Isl., Qld., 12. VIII. 1969, V. Stablum (UQIC, ZSM); 2 ♂♂, 1 ♀, Eurong, Fraser Is., Qld., 11.–13. VIII. 1969, V. Stablum (UQIC); 1 ♀, Young X-ing, via Petrie, S. E. Qld., 7. V. 1965, B. Cantrell (UQIC); 1 ♂, 1 ♀, Tin Can Bay, Q., 17. X. 1970, G. Monteith (UQIC); 1 ♂, Maclean, Q., 28. II. 1965, T. Weir (UQIC); 1 ♀, Balclutha River, Cape York Pen., N. Qld., 2. IX. 1972, Baehr, Berg, Spieth (CRN); 1 ♂, Hall's Gap, Grampian Ra., W. Vic., 2. I. 1966, B. Cantrell (UQIC); 1 ♂, Hall's Gap, Vic., 12. I. 1958, S. S. Sekhon (UQIC); 1 ♂, Cairn Curren Res. via Maldon, Vic., 1. I. 1966, T. Weir (UQIC); 1 ♂, Acheron Way, Warburton-Marysville, E. Vic., 12. I. 1966, B. Cantrell (UQIC); 1 ♀, Dorrigo, W. Heron (SAM); 3 ♂♂, 3 ♀♀, Mt. Lofty, W-Slope, 1280', SA, 23. XI. 1973, P. B. Mc Quillan (SAM, ZSM); 1 ♀, Mt. Lofty Range, S. A., (SAM); 2 ♂♂, 4 ♀♀, Myponga, SA, H. M. Hale (SAM, ZSM); 5 ♂♂, 1 ♀, Cox's Creek, Mylor, SA, X. 1925, H. Womersley (SAM, ZSM); 1 ♀, Bridgewater, H. M. Hale (SAM); 1 ♀, Mt. Barker, SA, 30. XII. 1963, J. A. Herdridge (SAM); 1 ♀, Hindmarsh Reservoir, Pt. Eliot, S. A. I. 1922, G. H. Dutton (SAM); 1 ♀, Yorke Pen., SA, 9. IV. 1931, H. Womersley (SAM); 1 ♀, Karatta, XI. 1886, Dipton (SAM); 1 ♂, 2 ♀♀, Ravine des Casoars, Kangaroo Isl., E. S. I. 3510, SA, 28. X. 1951, G. F. Gross (SAM); 2 ♀♀, Rocky R., Kangaroo I. SA, Mus. Exp., XII. 1934 (SAM); 2 ♂♂, Hobart, Tas., 5. XI. 1916, C. E. Cole (SAM); 1 ♀, Mt. Wellington, S-Tasmania, 14. XI. 1972, Baehr, Berg, Spieth (CRN); 2 ♀♀, Tasmania, A. Simson (SAM); 2 ♂♂, 2 ♀♀, Mt. Lamington, 1300–1500 ft., N. E. Papua, C. T. Mc Namara (SAM).

Type locality. North Stradbroke Island, southeastern Queensland.

Diagnosis. Medium-sized species, characterized by wide pronotum and at least three conspicuous light spots at lateral border of hemielytra, and by ♂ right paramere with short head and moderately elongate, apically slightly excised appendices.

Description

Length. ♂: 4–4.45 mm; ♀: 4.3–4.8 mm; width of pronotum: ♂: 2.15–2.25 mm; ♀: 2.25–2.4 mm; ratio width/length of pronotum: ♂: 2.2–2.6; ♀: 2.2–2.45; width of hemielytra: ♂: 2.35–2.5 mm; ♀: 2.5–2.65 mm.

Colour. Head, anterior lobe of pronotum, and scutellum black. Posterior lobe of pronotum yellow to reddish, medially mostly even lighter. Dark punctures in posterior lobe coarse, conspicuous. Clavus and median part of corium reddish, dark brown, or almost black, corium laterally dark brown to almost black. Lateral border at base with an elongate yellow spot and with three yellow, well defined lateral spots. Membrane brownish. In reddish specimens pattern especially striking. Anterior border of clypeus and labrum yellow, other mouthparts black, labium basally piceous, apically reddish. Lower surface black, epipleurae of pronotum and hemielytra yellow. Legs yellow, apex of femora, basal parts of tibiae, and last tarsal segment infusate. Basal segment of antennae yellow to light brown, 3rd and 4th segments infusate.

Head. Much narrower between eyes than long. Surface smooth, with a well developed median ridge on frons. Clypeus with numerous transverse ridges. Labium reaching posterior border of metacoxae. 3rd segment of antennae as long as or slightly longer than 4th, almost twice as long as 2nd segment.

Pronotum. Wide, apex sinuate, lateral borders convex, base trisinate. Punctures on posterior lobe coarse, rather dense.

Scutellum. Much wider at base than long. Moderately punctate.

Hemielytra. Widely impunctate, smooth. Clavus with a row of punctures near lateral border, this row, however, reduced well before apex of clavus. Corium with a dense row of punctures at median border and with scattered fine punctures behind this row. Apical part of corium largely impunctate.

♂ genitalia. Lateral lobes of pygophore far removed from apex. Apex slightly convex to almost straight. Apex of right paramere not elongate nor pointed, but slightly keeled, anteriorly overhanging. Appendices moderately elongate, apically widened and excised.

Variation. Colour, but not pattern, is rather variable, as very dark specimens exist not exhibiting the striking reddish colour of clavus and median part of corium. Southern specimens, especially from Victoria and Tasmania, tend to be especially dark and less contrasting. Also rather great variation in width of pronotum noted.

Distribution (Fig. 31). Eastern Queensland, Victoria, South Australia, Tasmania, and New Guinea.

Material examined (101 specimens). Apart from type series four specimens are doubtfully assigned to this species and are not included in the type series: 1 ♀, Arooma Spring, nr. Copley, 19. XI. 1951, G. F. Gross (SAM); 2 ♀♀, Karatta, 9. II. 1886, Dipton (SAM); 1 ♀, Krisa, N. New Guinea, Vanimo, IV. 1939, L. E. Cheesman (SAM).

Habits. Apparently this species lives especially in sandy areas and occurs on the borders of creeks and lakes. Records are available from almost all months.

Ochterus baehri Rieger

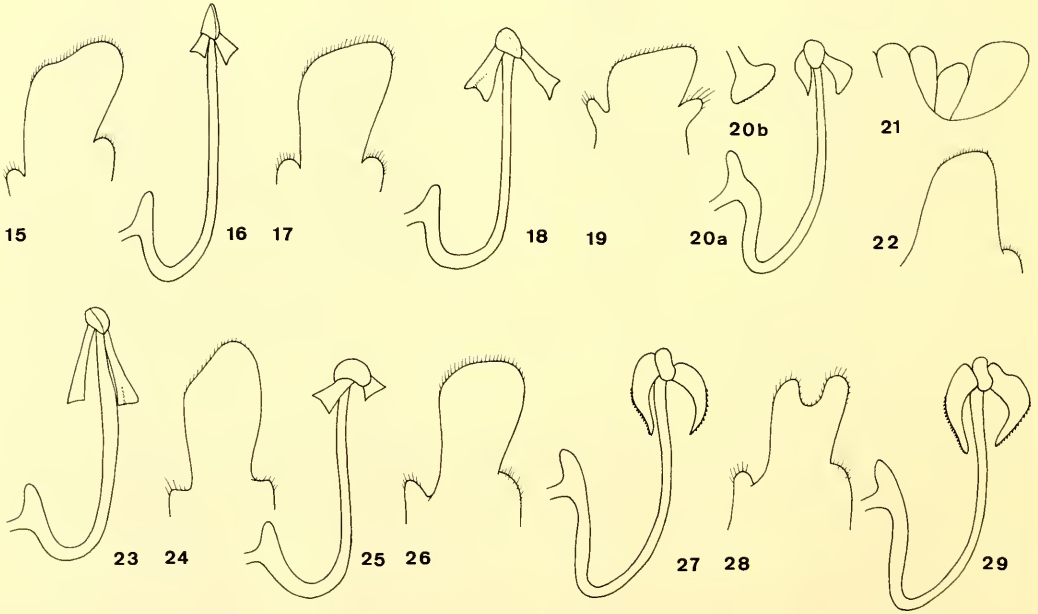
This species has two subspecies in northern Australia:

Ochterus baehri baehri Rieger (Figs 9, 32)

Rieger, 1977, p. 215

Types. Holotype in CRN (not seen): ♂, Stewart River, Cape York Peninsula, N. Qld., 6. IX. 1972, Baehr, Berg, Spieth. — I saw three paratypes: 1 ♂, 1 ♀ (CRN), 1 ♀ (ZSM) from type locality.

Type locality. Stewart River, Cape York Peninsula, north Queensland.



- Figs 15 and 16. *Ochterus australicus* Jaczewski. 15. ♂ pygophore; 16. ♂ right paramere.
 Figs 17 and 18. *Ochterus eurythorax*, spec. nov. 17. ♂ pygophore; 18. ♂ right paramere.
 Figs 19 and 20. *Ochterus baehri riegeri*, subspec. nov. 19. ♂ pygophore; 20a. ♂ right paramere; 20b. Appendix of right paramere.
 Figs 21–23. *Ochterus brachysoma* Rieger. 21. Last ventral sternites of ♂; 22. ♂ pygophore; 23. ♂ right paramere.
 Figs 24 and 25. *Ochterus atridermis*, spec. nov. 24. ♂ pygophore; 25. ♂ right paramere.
 Figs 26 and 27. *Ochterus secundus* Kormilev. 26. ♂ pygophore; 27. ♂ right paramere.
 Figs 28 and 29. *Ochterus pseudosecundus*, spec. nov.; 28. ♂ pygophore; 29. ♂ right paramere.

Diagnosis. Distinguished from all other species by ♂ genitalia, from other subspecies by average larger size, yellow lateral spot on corium larger and rather circular, and appendices of ♂ right paramere less axe-shaped.

Description

For the purpose of comparison with other species some characters mentioned or omitted by RIEGER (1977) are redescribed or added.

Length. ♂: 3.65 mm; ♀: 4.05–4.25 mm; width of pronotum: ♂: 1.97 mm; ♀: 2.08–2.15 mm; ratio width/length of pronotum: ♂: 2.27; ♀: 2.19–2.25; width of hemielytra: ♂: 1.96 mm; ♀: 2.25–2.35 mm.

Colour. Surface rather reddish. Head, anterior lobe of pronotum, and scutellum black. Posterior lobe of pronotum yellow to reddish, in some specimens laterally darker, with dense, coarse, black puncturation. Lateral border widely yellow. Hemielytra blackish-brown, but with lateral part of clavus and basal and apical part of corium reddish, and with a large reddish spot at lateral border near apex of exocorium.

For further description of head, pronotum, and hemielytra see RIEGER (1977).

♂ genitalia. Pygophore wide, with lateral lobes very close to apex, apex slightly convex. Head of right paramere short, appendices short, apically widened, axe-shaped, finely crenulate on outer edge.

Variation. With respect to few specimens little variation noted, only colour varies to some degree.

Distribution (Fig. 32). Middle of Cape York Peninsula, north Queensland, from Stewart River near Coen to Iron Range.

Material examined (6 specimens). Queensland: 1 ♂, 2 ♀♀, Stewart River, 6. IX. 1972, Baehr, Berg, Spieth, paratypes! (CRN, ZSM); 2 ♀♀, Coen, Cape York Pen., 27. X. 1969, B. Cantrell (UQIC, ZSM); 1 ♀, Iron Range, Cape York Pen., 11.–17. V. 1968, G. Monteith (UQIC).

Habits. Collected by hand sampling and in Barber traps exposed on sandy banks at the border of an estuarine river, ca 5 km off the coast. Thus far recorded from May, September, and October.

Ochterus baehri riegleri, *subspec. nov.*

(Figs 3, 10, 19, 20, 32)

Types. Holotype: ♂, Humpty Doo, NT, 1.–5. XI. 1984, M. Baehr (QM). – Paratypes: 3 ♀♀, same locality, same date (CRN, UQIC, ZSM); 1 ♂, 1 ♀, West Alligator River, 60 km W. of Jabiru, NT, 2.–4. XI. 1984, M. Baehr (ZSM).

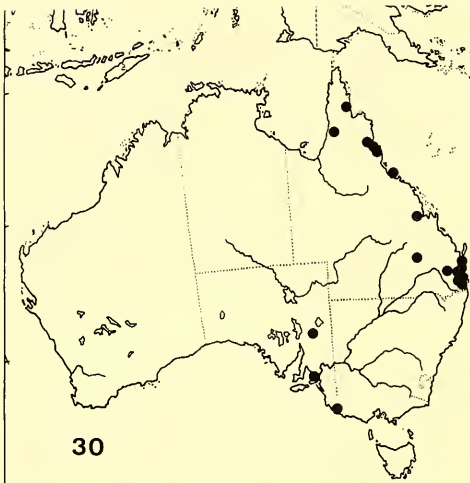
Type locality: Humpty Doo, Northern Territory.

Diagnosis. Distinguished by ♂ genitalia, and from other subspecies by slightly smaller size, light areas of pronotum and hemielytra more restricted, and appendices of ♂ right paramere still more axe-shaped.

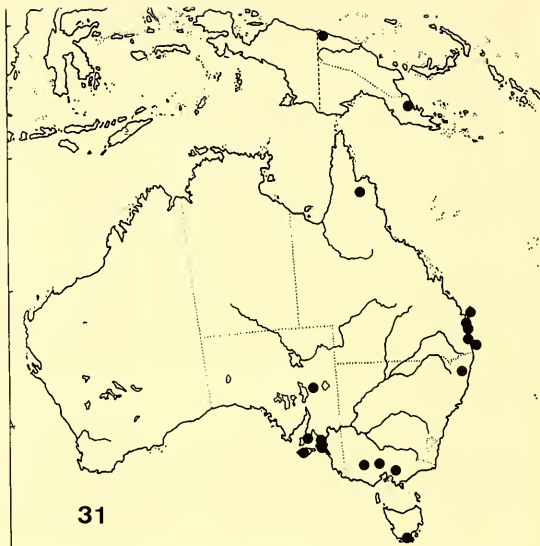
Description

Length. ♂: 3.5–3.65 mm; ♀: 3.8–4.05 mm; width of pronotum: ♂: 1.9–1.92 mm; ♀: 2.02–2.18 mm; ratio width/length of pronotum: ♂: 2.23–2.27; ♀: 2.31–2.35; width of hemielytra: ♂: 2.05–2.1 mm; ♀: 2.2–2.35 mm.

Colour. Head, anterior lobe of pronotum, scutellum, and dark parts of hemielytra black or very dark brown. Posterior lobe of pronotum laterally dark brown, medially yellow. Dark punctures very coarse, conspicuous. Lateral border anteriorly yellow. Hemielytra largely dark, only anterior half of lateral border narrowly light, also a narrow stripe each at base of clavus and at lateral border of mesocorium, a small transverse spot on mesocorium, and a similar, but slightly larger transverse spot on lateral border, dark reddish, lateral spot on level with transverse spot adjacent to clavus. Membrane



30



31



32



33



34

black. Pattern rather inconspicuous. This subspecies has the general appearance of being rather dark coloured. Anterior border of clypeus, labrum, and 2nd to 4th segments of labium yellowish. Maxillary plates dark yellow. 1st segment of labium dark brown. 1st and 2nd segments of antennae yellow, terminal segments piceous. Lower surface black, lateral parts of thorax and abdomen reddish. Legs yellow, apex of femora and of tibiae, and terminal tarsal segment infuscate.

Head rather similar to that of nominate subspecies.

Pronotum. Wider in ♀ than in ♂, slightly narrower than in *O. b. baehri*. Apex not much produced, lateral borders moderately convex, base trisinate. Whole surface strongly and rather densely punctate.

Scutellum as in nominate subspecies.

Hemelytra. Surface moderately punctate. Membrane surpassing apex of abdomen.

♂ genitalia. Pygophore apically wide, apex absolutely straight, lateral lobes very close to apex. Head of right paramere short, appendices short, strongly axe-shaped, finely crenulate outside. Appendices slightly more widened at apex than in *O. b. baehri*.

Variation. Little variation noted, apart from pronotum of ♀ apparently being wider than of ♂.

Distribution (Fig. 32). Northernmost part of Northern Territory.

Material examined (6 specimens). Only type series.

Habits. All specimens were collected in Barber traps exposed for few days near pools on the banks of a small river and a creek, respectively, where the bugs apparently live on wet, black, muddy soil. All captures made at beginning of November.

Note. *O. b. riegeri* is certainly closely related to *O. b. baehri* of the Cape York Peninsula and seems to replace the Queensland subspecies in the far Northern Territory. However, a definitive classification must await the sampling of more material.

Ochterus brachysoma Rieger

(Figs 4, 11, 21, 22, 23, 33)

Rieger, 1977, p. 214

Types. Holotype (not seen): ♂, Stewart River, Cape York Pa., North Qld., 6.IX. 1972, Baehr, Berg, Spieth (CRN). — Paratypes: I saw 1 ♂ and 2 ♀♀ from the type locality (ZSM) and 3 ♂♂ and 1 ♀ from Balclutha River, Cape York Pa., N. Qld. 2.IX. 1972, Baehr, Berg, Spieth (CRN, ZSM).

Type locality: Stewart River, Cape York Peninsula, north Queensland.

Diagnosis. A small, dark species, distinguished by three conspicuous light spots on lateral border of hemelytra, pronotum with but a narrow light border in middle of posterior border, and ♂ right paramere with extremely elongate appendices.

Description

For extensive description see RIEGER (1977). For better comparison with the other species some important characters or characters not mentioned by Rieger are added.

Length. ♂: 3.45–3.65 mm; ♀: 3.78–3.85 mm; width of pronotum: ♂: 1.9–1.98 mm; ♀: 2.04–2.06 mm; ratio width/length of pronotum: ♂: 2.27–2.3; ♀: 2.3–2.32; width of hemelytra: ♂: 1.95–2 mm; ♀: 2.05–2.08 mm.

Fig. 30. Distribution of *Ochterus australicus* Jaczewski.

Fig. 31. Distribution of *Ochterus eurythorax*, spec. nov.

Fig. 32. Distribution of *Ochterus baehri baehri* Rieger: ●, and of *O. baehri riegeri*, subspec. nov.: ▲.

Fig. 33. Distribution of *Ochterus brachysoma* Rieger: ●, and of *O. atridermis*, spec. nov.: ▲.

Fig. 34. Distribution of *Ochterus secundus* Kormilev: ●, and of *O. pseudosecundus*, spec. nov.: ▲.

Colour. Black, on apical part of hemielytra dark brown. Posterior border of pronotum medially narrowly yellow, also lateral border of pronotum medially narrowly yellow, also lateral border of pronotum, lateral border of hemielytra at base, and three distinct lateral spots yellow. Membrane brown. Anterior border of clypeus and labrum yellow to light brown. Labium black at base, then piceous. Other mouthparts black.

Head. Surface smooth, frons with elongate keel, clypeus with numerous transverse ridges. 4th antennal segment slightly longer than 3rd.

Pronotum. Wide, lateral borders evenly convex, base gently trisinate. Surface regularly and coarsely punctate.

Hemilelytra. Widest near base, then narrowed to apex. Base rather densely punctate.

♂ genitalia. Pygophore short, conspicuously shorter than adjacent sternites, hence apical border line of abdomen notched at pygophore. Pygophore tapering to apex, apex rather straight. Head of right paramere short, appendices very elongate, ca $\frac{2}{5}$ of length of paramere, and apically slightly widened. Shaft of paramere slightly thickened near middle.

Variation. Little variation noted.

Distribution (Fig. 33). Whole eastern Cape York Peninsula, north Queensland.

Material examined (15 specimens). Queensland: 1 ♂, 2 ♀♀, Stewart River, 6. IX. 1972, Baehr, Berg, Spieth, paratypes! (ZSM); 3 ♂♂, 1 ♀, Balclutha River, 2. IX. 1972, Baehr, Berg, Spieth, paratypes! (CRN, ZSM); 3 ♂♂, Iron Range, Cape York Pa., 26. V.–2. VI. 1971, B. K. Cantrell (UQIC); 2 ♀♀, F. W. Lake, 10 ml. N. of Rocky R., via Coen, 17. XII. 1964, G. Monteith (UQIC); 1 ♀, Telegraph line crossing, Jardine R., Cape York, 15.–17. VI. 1969, G. Monteith (UQIC); 1 ♂, 1 ♀ (SAM).

Habits. Specimens collected by the author in 1972 were found on sandy river banks, partly in Barber traps, exposed near the border of an estuarine river, ca 5 km off the coast. At this place, *O. brachysoma* occurred together with *O. b. baehri*. Records are available from May, June, September, and December.

Ochterus atridermis, spec. nov.

(Figs 5, 12, 24, 25, 33)

Types. Holotype: ♂, Beerway, S. E. Qlnd., 22. IX. 1956, Sandy bank of creek, *Ochterus australicus* Jaczewski, det. N. Kormilev (QM). – Paratype: ♀, Humpty Doo, NT, 1.–5. XI. 1984, Barber trap, M. Baehr (ZSM).

Type locality. Beerway, southeastern Queensland.

Diagnosis. A small, almost completely dark species without any light spot on hemielytra and with narrow pronotum.

Description

Length. ♂: 3.35 mm; ♀ (to apex of abdomen): 3.5 mm; width of pronotum: ♂: 1.69 mm; ♀: 1.74 mm; ratio width/length of pronotum: ♂: 2.14; ♀: 2.06; width of hemielytra: ♂: 1.88 mm; ♀: 1.92 mm (left hemielytron absent).

Colour. Whole surface black, posterior part of hemielytra and membrane changing to dark piceous. Posterior border of pronotum in middle narrowly yellow, lateral borders of pronotum also yellow, but anterior part of border with a narrow dark stripe laterally. Scutellum at the very tip yellow. Hemielytra with but a narrow, yellow lateral stripe at base. Anterior border of clypeus yellow, labrum and bucculae black, ventral border of maxillary plate and labium light brown, labium lighter to apex. Scapus and pedicellus of antenna light brown, other segments dark piceous. Lower surface black to dark piceous, laterally and posteriorly lighter, epipleurae of pronotum and hemielytra yellow. Legs dark yellow, femora on anterior surface and near apex, tibiae on outer surface, and terminal tarsal segment infuscate.

Head. Surface smooth, frons with a conspicuous longitudinal median ridge, clypeus with numerous, converging transverse ridges. Lateral parts of clypeus, bucculae and 1st labial segment densely pilose with white hairs. Antenna rather elongate. 4th segment nearly 1.5× as long as 3rd segment. Labium surpassing posterior border of metacoxae.

Pronotum. Narrow, convex, less than 2.15× as wide as long. Apex rather produced, lateral borders evenly convex, base trisinate. Transverse furrow inconspicuous. Surface with rather dense, but fine punctures.

Scutellum. Widely triangular, ca 1.5× as wide at base as long, regularly punctate.

Hemelytra. In ♂ slightly surpassing apex of abdomen, in ♀ shorter than abdomen, genital segment exposed. Hemelytra widest in middle. Sparsely punctate at base, punctures fine, posterior part largely smooth.

♂ genitalia. Pygophore with strongly convex apex. Lateral lobes far removed from apex. Head of right paramere low, slightly keeled, anteriorly overhanging. Appendices short and wide, even slightly widened to square apex.

Variation. Largely unknown.

Distribution (Fig. 33). As far as known, southeastern Queensland and northernmost Northern Territory.

Material examined (2 specimens). Only ♂ holotype and ♀ paratype.

Habits. ♀ paratype collected in Barber trap exposed near border of a small pool in a creek bed on wet, black, muddy soil, together with *O. baehri riegeri*. Thus far recorded from September and beginning of November.

Note. Judging from ♂ genitalia this species is closest related to *O. eurythorax* than to anyone other Australian species. *O. eurythorax*, however, is in other respects not related to *O. atridermis*. Hence, its relationships are at present obscure. Apparently it is not closely related to anyone of the Australian and Oriental species treated by JACZEWSKI (1934), KORMILEV (1971) and RIEGER (1977).

Ochterus secundus Kormilev

(Figs 13, 26, 27, 34)

Kormilev, 1971, p. 441

Types. Holotype (not seen): ♀, N. Cronully, NSW (Australian Museum Sydney). — Paratypes: I saw three ♂ paratypes: ♂, Cairn Curren Reservoir, via Maldon, Vic. 1. I. 1966, T. Weir (UQIC); ♂, Birrabeen Lake, Fraser Is., Qld., 12. VIII. 1969, V. Stablum (UQIC); ♂, Greenbank, Qld., 8. I. 1963, G. Monteith (UQIC).

Type locality: Cronully, New South Wales.

Diagnosis. A vividly coloured, large species with pilose clypeus, distinguished from related species by pattern less distinct, apex of ♂ pygophore entire, and appendices of ♂ right paramere less falciform.

Description

In addition to the description of KORMILEV (1971) some characters not mentioned by Kormilev or described not in detail, are redescribed, especially structure of ♂ genitalia and pattern which is not correctly described.

Length. ♂: 4.38–4.95 mm; ♀: 4.85–5.45 mm; width of pronotum: ♂: 2.25–2.5 mm; ♀: 2.56–2.82 mm; ratio width/length of pronotum: ♂: 2.12–2.18; ♀: 2.15–2.2; width of hemelytra: ♂: 2.36–2.75 mm; ♀: 2.75–3.05 mm.

Colour. Head, anterior lobe of pronotum, and scutellum black. Posterior lobe of pronotum light brown or yellow, sometimes laterally rather dark and only medially yellow. Dark punctures well visible. Lateral borders of pronotum widely yellow. Hemelytra largely reddish-brown, lateral part of

base and three lateral spots yellow. Lateral basal stripe and anterior lateral spot normally not merging. Region around lateral spots and an ill-defined area near apex of mesocorium dark brown. Base of clavus and of mesocorium adjacent to clavus commonly greyish and heavily punctate. In light specimens hemielytra typically tri-coloured: yellow, reddish, and dark brown. Membrane dark piceous. Some specimens, however, have the hemielytra very dark, with just the lateral spots light.

Head. Median ridge on frons short, inconspicuous. Clypeus without transverse ridges, but frons and clypeus densely covered with short, white hairs.

Pronotum. Moderately wide, lateral borders not much convex, sometimes almost straight.

Hemielytra. Well surpassing apex of abdomen, widest in middle, rather densely punctate.

♂ genitalia. Apex of pygophore slightly convex, entire. Appendices of right paramere strongly curved, falciform, but shorter (in Fig. 27 right) appendix not sharply bent. Outer border strongly serrate.

Variation. Quite variable species, especially in colour and pattern which can be rather uniformly dark.

Distribution (Fig. 34). From eastern Victoria to north Queensland, also in northwestern Australia north of Great Sandy Desert.

Material examined (31 specimens):

Queensland: 2♂♂, Einasleigh River, 65 km E. of Georgetown, 7.IX. 1972, Baehr, Berg, Spieth (CRN, ZSM); 1♂, Birrabeen Lake, Fraser Is., 12.VIII. 1969, V. Stablum, paratype! (UQIC); 1♀, same locality, same date, det. *O. australicus* Jacz., N. Kormilev (UQIC); 1♂, Eurong, Fraser Is., 11.–13.VIII. 1969, V. Stablum (UQIC); 1♂, 3♀♀, Lake Broadwater nr. Dalby, 12.IV. 1986, G. & A. Daniels (UQIC); 1♂, 2♀♀, Three Noon Cr, Cania Gorge, 19.XI. 1967, T. E. Woodward (UQIC); 1♂, 2♀♀, 5 juv., Somerset Dam, 4.II. 1957, T. E. Woodward (UQIC); 1♀, Colleges Crossing, via Ipswich, 21.X. 1968, N. Gough (UQIC); 1♂, Greenbank, 8.I. 1963, G. Monteith, paratype! (UQIC).

New South Wales: 2♀♀, Glenfield (SAM).

Victoria: 1♂, Cairn Curren Res., via Maldon, 1.I. 1966, T. Weir, paratype! (UQIC).

South Australia: 1♀, 10 km ENE. Stuart Creek HS, 10.–11.III. 1975, E. G. Matthews (SAM); 1♀, Macumba, Hackett (SAM); 1 (sex?), 2 juv., Pt. Elliot, Dutton (SAM).

Western Australia: 1♂, Kimberley Distr., Mjöberg (SAM).

Habits. Largely unknown, specimens were collected in almost all months with exception of the period from May to July.

***Ochterus pseudosecondus*, spec. nov.**

(Figs 6, 14, 28, 29, 34)

Types. Holotype: ♂, Gascoyne River, 15 km N. of Carnarvon, W. A., 13.XII. 1984, M. Baehr (QM). – Paratypes: 1♂, 6♀♀, same locality, same date (CRN, UQIC, ZSM); 1♂, Ashburton River at Nanutarra Roadhouse, W. A., Barber trap, 6.–7.XII. 1984, M. Baehr (ZSM).

Type locality. Gascoyne River north of Carnarvon, Western Australia.

Diagnosis. Large, vividly coloured species, characterized by pilose clypeus, distinguished from related *O. secundus* by pattern more vivid, apex of ♂ pygophore deeply notched, and appendices of ♂ right paramere more falciform.

Description

Length. ♂: 4.42–4.85 mm; ♀: 5.1–5.25 mm; width of pronotum: ♂: 2.35–2.48 mm; ♀: 2.62–2.75 mm; ratio width/length of pronotum: ♂: 2.15–2.25; ♀: 2.12–2.17; width of hemielytra: ♂: 2.48–2.62 mm; ♀: 2.78–2.95 mm.

Colour. Head, anterior lobe of pronotum, and scutellum glossy black, in one specimen pronotum and scutellum brown. Posterior lobe of pronotum reddish, not much lighter in middle, dark punctures

conspicuous. Lateral border of pronotum at most part light yellow. Ground colour of hemielytra light reddish. Three lateral spots yellow and not much lighter than ground colour. Lateral border from base yellowish, merging with anterior lateral spot. Membrane dark brown with lighter border. Anterior border of clypeus and labrum yellow, other mouthparts black. Bucculae with brown border, base of labium dark, apex lighter. Lower surface black, laterally lighter, apex of abdomen yellow, also epipleurae of pronotum and hemielytrae yellow. Legs yellow, apex of tibiae and terminal segment of tarsi infuscate.

Head. Frons with short, inconspicuous median ridge. Clypeus densely covered with short, white hairs, rugose, but without distinct transverse ridges. Lateral part of clypeus, bucculae, and basal segment of labium densely pilose. Labium slightly surpassing metacoxae. 3rd segment of antennae slightly longer than 4th.

Pronotum. Moderately wide, apex produced, anterior angles rounded, but slightly produced, lateral borders gently convex to almost straight, base strongly trisinate. Whole pronotum densely punctate.

Scutellum. At base almost $1.5\times$ as wide as long. Regularly punctate.

Hemielytra. Surpassing apex of abdomen. Widest at middle, lateral borders feebly sinuate behind base. Clavus and base of mesocorium rather densely punctate. Apical part of corium smooth.

♂ genitalia. Apex of pygophore deeply notched. Head of right paramere very short, appendices fal-ciform, especially shorter (in Fig. 29 right) appendix sharply bent inwards. Outer side strongly serrate.

Variation. Apart from one specimen with anterior lobe of pronotum and scutellum brown instead of black, little variation noted.

Distribution (Fig. 34). As far as known, Western Australia south of Hamersley Range to at least Gascoyne River.

Material examined (9 specimens). Only type series.

Habits. Specimens were captured by hand collecting and in Barber traps on sandy river banks near small pools in the largely dry beds of large rivers, where they run and fly very actively. Thus far collected but in December.

O. pseudosecundus is closely related to *O. secundus* from eastern and northern Australia, and it is superficially very similar. Further investigations may settle the question, whether both taxa are species or merely subspecies of an Australian-wide ranging species.

Discussion

The Australian Ochterid fauna is surprisingly diverse and contains, so far known, eight species and an additional subspecies, including the outstanding *Megochterus nasutus*, the single species of this genus. Hence the Australian fauna is thus far more diverse than the Oriental Ochterid fauna, as is also the fauna of New Guinea which includes at least four, perhaps even 5 species of *Ochterus* (according to KORMILEV 1971).

Within the Australian members of the genus *Ochterus* several clear-cut groups can be readily distinguished: 1. the *secundus*-group (*O. secundus* and *O. pseudosecundus*); 2. the *australicus*-group (*O. australicus* and *O. eurythorax*); 3. the *baehri*-group with the subspecies *O. b. baehri* and *O. b. riegeri*; 4. the *brachysoma*-group (*O. brachysoma* only); and 5. the *atridermis*-group (*O. atridermis*). Of these, the *secundus*-group is certainly most isolated within the Australian Ochterids.

Secundus-, *australicus*-, and *baehri*-groups each consist of a closely related pair of species or subspecies, respectively, which is geographically separated in the *secundus*- and *baehri*-groups, highly sympatric, however, in the *australicus*-group.

Certainly the distribution of serval taxa is still unsatisfactorily known, in particular with respect to the far North and to Western Australia. Further investigations in these regions may reveal still new species or species hitherto known only from eastern Australia. However, eastern Australia, in particular Queensland, possesses the most diverse fauna of as many as six *Ochterus* species and additionally *Megochterus nasutus*. *O. b. baehri* and *O. brachysoma*, however, are but known from the Cape York peninsula in northern Queensland. Southern Australia has less species, and in Tasmania but one species occurs. All southern *Ochterus* belong to species widely distributed in Queensland. In the northern part of Northern Territory and in northwestern Australia Ochterids are also rather poorly represented, with two and one species, respectively. Some of them, however, are different from eastern species. Hence, in Australia Ochterids have their main centre presumably in eastern Queensland.

This pattern of distribution reflects the faunal history of the Ochterids in Australia. It seems that colonization of Australia by Ochteridae took place from the northeast, perhaps via New Guinea, to northern and eastern Queensland. Several different lineages were perhaps involved in this process. So, Queensland has representatives of all Australian groups of Ochteridae. Then some species spread further to southeastern Australia, South Australia, and Tasmania. In northern Australia, on the other hand, separate subspecies or species, respectively, evolved in the far north and in northwestern Australia. In both cases, the western species (*O. pseudosecondus*) or subspecies (*O. baehri riegeri*) is certainly phylogenetically more advanced. Hence, the evolution of these northern and western taxa occurred presumably by isolation of the western populations of once widespread species in faunal refugia during dry periods of Glaciation period, when the northern and western faunal refugia were isolated by extensive barriers of dry country. This isolation was perhaps a fairly recent event, because the western taxa are still closely related to their eastern counterparts, and it is illustrated by the fact that *O. baehri riegeri* has achieved but subspecific rank.

It is still obscure, whether the diversity of Ochteridae in Australia is due to an evolutive radiation within Australia, originating from one or few lineages, or either Australia was already colonized by most or all of the now existing lineages. The rather high species diversity, however, in neighbouring New Guinea, in contrast to low diversity in continental Asia, is more consistent with the last assumption. Perhaps few species evolved actually within Australia. But this assumption must await better knowledge of the Ochterid fauna of New Guinea and Indonesia to be confirmed.

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